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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/633,375

07/21/2003

Michael V. Sliger

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11/21/2006

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EXAMINER

WEI, ZHENG

ART UNIT

PAPER NUMBER

2192

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/633,375

Applicant(s)

SLIGER ET AL.

Examiner

Zheng Wei

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/28/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. This office action is in response to the application filed on 07/21/2003.
2. Claims 1-34 are pending and have been examined.

***Priority***

3. The priority date for this application is 07/21/2003. No continuing data and foreign applications are related to this application.

***Information Disclosure Statement***

4. The information disclosure statement filed 02/18/2005 has been placed in the application file and the information referred to therein has been considered.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 12, 23-25 and 29-33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**Claims 12 and 23:**

Claims 12 and 23 are rejected under 35 U.S.C 101 because the claimed invention recites "a computer readable medium" defined to include "a modulated data signal such as a carrier wave..." as disclosed on page 13, lines 4-24 of the applicant's specification. A signal, a form of energy, is not a tangible physical

article or object and it does not fall within either of the two definitions of manufacture. Thus, under the Interim Guidelines such media do not fall within one of the four statutory classes of 35 U.S.C 101 Annex IV (c). Therefore, the above claims are non-statutory. For further information, see interim Guidelines for Examination of Patent Application for Patent Subject Matter Eligibility (Signed 26Oct2005) –OG Cite: 1300 OG 142.

<<http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>>

**Claims 24-25 and 29-33:**

Claims 24-25 and 29-33 are rejected under 35 U.S.C. 101 because those claims refer to a computer-readable medium having only stored thereon a data structure (data structure Per Se.), which is **nonfunctional descriptive material**.

According to MPEP, chapter **2106 Patentable Subject Matter - Computer-Related Inventions [R-3], IV, 1, (b)**, descriptive material that cannot exhibit any functional interrelationship with the way in which computing processes are performed does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under **35 U.S.C. 101**. Therefore, the above claims are non-statutory. For further information, see MPEP (Latest Revision August 2006), Chapter 2106 Patentable Subject Matter - Computer-Related Inventions [R-3], IV. DETERMINE WHETHER THE CLAIMED INVENTION COMPLIES WITH 35 U.S.C. 101.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 26 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 26 and 27:

The limitations "the other delta" in both claims lack proper antecedent basis. For the purpose of compact examination, the Examiner treats them as "another delta".

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1, 4-8, 10 and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files").

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Claim 1:

Zan discloses in a computing environment, a method comprising:

- receiving information corresponding to a plurality of source files (see for example, p.2, left column, lines 10-13, "obtaining optimal compression of a collection of n files");
- selecting a first source file as a base file (see for example, p.2, left column, lines 36-38, "each target file is compressed with respect to a single reference file");
- generating a delta from the first source file and a second source file (see for example, p.2, left column, lines 36-38, "each target file is compressed with respect to a single reference file"); and
- packaging the base file and the delta into a self-contained package (see for example, p.2, left column, lines 41-44, "compressing and uncompressing an entire collection").

Claim 4:

Zan discloses the method of claim 1 wherein the first source file and the second source file are not different versions of the same file. (see for example, Fig.1, and related text, also see, p.3, left column, lines 8-15, "collection of files")

Claim 5:

Zan discloses the method of claim 1 wherein the first source file and the second

source file are not different language translations of the same file. (see for example, Fig.1, and related text, also see, p.3, left column, lines 8-15, "collection of files")

Claim 6:

Zan discloses the method of claim 1 wherein the first source file and the second source file are different language translations of the same file. (see for example, Fig.1, and related text, also see, p.3, left column, lines 8-15, "collection of files")

Claim 7:

Zan further discloses the method of claim 1 wherein selecting the first source file as the base file comprises selecting the source file based on package size considerations. (see for example, p.3, section 2, "Delta Compression Based on Optimum Branchings" and also see abstract, "compress a large collection of related files" and p.3, right column, lines 1-5, "The optimal sequence for compression")

Claim 8:

Zan also discloses the method of claim 7 further comprising constructing a directed graph of file sizes based on multiple possible pairings of source files, and selecting the first source file based on information in the directed graph. (see for example, Fig.1 and related text, "edge" and "node")

Claim 10:

Zan discloses the method as in claim 1 wherein selecting the first source file as the base file comprises computing sizes of possible deltas and selecting the first source file based on the sizes. (see for example, p.4, right column, lines 3-7; "pairwise delta compression", "Cluster-Based Delta Compression")

Claim 11:

Zan also discloses the method of claim 1 further comprising, providing the package to a recipient, the recipient applying the delta to the first source file to synthesize the second source file (see for example, p.1, right column, lines 1-8, "sender and receiver both possess a reference file").

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



12. Claims 12, 24-28 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files")

Claim 12, 24:

Zan discloses the method as discussed in claim 1 above. It is well known in the computer art that said method can be practiced and stored in the computer-readable medium. Therefore, they are also obvious by Zan.

Claim 25:

Zan discloses the data structure of claim 24 further comprising a third set of data comprising another delta file (see for example, p.3, right column, lines 1-5, "sequence for compression" about 4 pairwise delta compressions). It is well known in the computer art to practice and store said method in the computer-readable medium. Therefore, it is also obvious by Zan.

Claim 26-27:

Zan further discloses the data structure of claim 24 wherein the other delta is configured to synthesize another target file when applied to the base/target file. (see for example, p.2, left column, lines 36-38, "each target file is compressed with respect to a single reference file" and also see p.3, right column, lines 1-5, "sequence for compression" about different combinations of pairwise compressions and also see related explanations). It is well known in the

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computer art to practice and store said method in the computer-readable medium. Therefore, it is also obvious by Zan.

Claim 28:

Zan further discloses the data structure of claim 24 further comprising transmitting the data structure from a source to a client recipient (see for example, p.1, right column, lines 1-8, "In a communication scenario, they typically exploit the fact that the sender and receiver both possess a reference file that is similar to the transmitted file."). It is well known in the computer art to practice and store said method in the computer-readable medium. Therefore, it is also obvious by Zan.

Claim 34:

Zan discloses the method as discussed in claim 1 above. It is well known in the computer art that said method should be performed by computer system.

Therefore, it is also obvious by Zan.

13. Claims 2, 29, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files") in view of Forbes (Forbes et al., US 6,381,742 B2).

Claim 2:

Zan discloses the method as in claim 1 above, but does not disclose the method further comprising, packaging data for directing a client extractor to synthesize a target file corresponding to the second source file from the base file and the delta. However, Forbes in the same analogous art of software package management discloses a manifest file (package data) to manage the installation, execution. (see for example, Fig.2A, element 207 and related text. Also see abstract about the manifest file). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the manifest file into the software package to provide configuration information to the software installation. One has motivation to do so to automatically install software package without requiring manual intervention by the user. (see for example, col.3, lines 30-34, "Because the manifest file contains the location of the distribution units for any dependencies, the software package manager can acquire and install the dependencies without requiring manual intervention by the user.")

Claims 29, 32 and 33:

Zan discloses the method as in claim 24 above, but does not disclose the method further comprising a third set of data comprising data for directing an extraction program. However, Forbes in the same analogous art of software package management discloses a manifest file (package data) to manage the installation, execution. (see for example, Fig.2A, element 207 and related text.

Also see abstract about the manifest file). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the manifest file into the software package to provide configuration information to the software installation. One has motivation to do so to automatically install software package without requiring manual intervention by the user. (see for example, col.3, lines 30-34, "Because the manifest file contains the location of the distribution units for any dependencies, the software package manager can acquire and install the dependencies without requiring manual intervention by the user.")

14. Claims 3, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files") in view of Henry (Craig James Henry, US 6,131,192).

Claim 3:

Zan discloses the method as in claim 1 above, but does not disclose the method further comprising, setting at least one file name by which a client extractor may synthesize a target file corresponding to the second source file from the base file and the delta. However, Henry in the same analogous art of software installation discloses a method for setting up the software product name. (see for example, Fig.4B, steps 415-445 and related text). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the target file name for decompressed file. One has motivation to do so to identify file

to decompress and set right file name to further installation and execution. (see for example, col.18, lines 26-32)

Claim 30:

Zan discloses the data structure of claim 24, but does not disclose the data structure further comprising a third set of data comprising an extraction program. However, Henry in the same analogous art of software installation discloses the software package includes a setup program (extraction program) and a compressed file. (see for example, col.1, lines 16-18). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the setup program in Zan's invention. One has motivation to do so to automatically perform the decompression process as once suggested by Henry (see for example, col.1, lines 45-47, "processes automatically")

15. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zan in view of Weiss (Mark Allen Weiss, "Data Structures & Algorithm Analysis in C++").

Claim 9:

Zan discloses the method as in claim 8 above wherein a branching B of a directed graph G does not contain a cycle, but does not disclose using minimum spanning tree or like algorithm to the directed graph to eliminate loop. However, Weiss in the same analogous art of eliminate loop in graph discloses a method of using minimum spanning tree. (see for example, p.356-362, "Prim's Algorithm")

and "Kruskal's Algorithm"). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use minimum spanning tree algorithm to eliminate loop in Zan's directed graph. One has motivation to do so to prevent loop in Zan's directed graph as once required by Zan (see for example, p.3, left column, line 19, "B does not contain a cycle").

16. Claims 13, 14, 15 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files") in view of Sliger (Sliger et al., US 6,216,175)

Claim 13:

Zan discloses in a computing environment, a method to compress a collection of files to generate a plurality of deltas and base files in a package, (see for example, p.1, right column, lines 23-26, "using delta compression to better compress large collections of file where it is not obvious at all how to efficiently identify appropriate reference and target files"), but does not explicitly disclose how to decompress them. However, Sliger in the same analagous art of software updating and patching discloses a method comprising:

- receiving a package (see for example, Fig.3, item 54 and related text, "Patch File"); and
- applying a delta in the package to a base file to synthesize a target file (see for example, Fig.3, items 54, 58 and related text, also see Fig.7, "user's computer" and related text)

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Sliger's decompressing method to decompress and generate target files from Zan's compressed file. One has motivation to do so in order to reduce communication or storage costs as once pointed by Zan (see for example, p.1, left column, section 1, Introduction)

Claim 14:

Zan and Sliger disclose the method as in claim 13 above, Zan further disclose the method wherein applying the delta to the base file comprises applying the delta to a base file included in the package (see for example, p.2, left column, lines 41-44, "compressing and uncompressing an entire collection", also see Fig.1 and related text).

Claim 15:

Zan and Sliger disclose the method as in claim 13 above. Zan also discloses the method wherein applying the delta to the base file comprises applying the delta to a base file synthesized from another delta and another base file (see for example, p.3, right column, lines 1-5, "sequence for compression")

Claim 21:

Zan and Sliger disclose the method as in claim 13 above. Zan also discloses the method further comprising, applying another delta to the synthesized target file to

synthesize another target file (see for example, fig.1 and related text, also see lines 1-5, "files 1...4").

Claim 22:

Zan and Sliger disclose the method as in claim 13 above. Zan also discloses the method further comprising, applying at least two deltas to a common base file to synthesize at least two target files (see for example, fig.1 and related text, also see lines 1-5, "The optimal sequence for compression is (0,1), (1,2), (1,3)").

Claim 23:

Zan and Sliger disclose the method as discussed in claim 13 above. It is well known in the computer art that said method can be practiced and stored in the computer-readable medium. Therefore, this claim is also obvious by Zan and Sliger.

17. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files") in view of Sliger (Sliger et al., US 6,216,175) and in further view of Forbes (Forbes et al., US 6,381,742 B2).

Claim 16:

Zan and Sliger disclose the method as in claim 13 above, but do not disclose



using the data file to determine to which base file each delta is to be applied.

However, Forbes in the same analogous art of software package management discloses a manifest file (package data) to manage the installation, execution.

(see for example, Fig.2A, element 207 and related text. Also see abstract about the manifest file). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the manifest file into Zan and Sliger's method to provide configuration information to the software installation. One has motivation to do so to automatically install software package without requiring manual intervention by the user as once suggested by Forbes. (see for example, col.3, lines 30-34, "Because the manifest file contains the location of the distribution units for any dependencies, the software package manager can acquire and install the dependencies without requiring manual intervention by the user.")

Claim 17:

Zan and Sliger disclose the method as in claim 14 above, but do not disclose the method wherein the data file comprises a set of instructions including instructions that identify a particular base file to which a particular delta file is to be applied.

However, Forbes in the same analogous art of software package management discloses a manifest file (data file) to manage the installation, execution. (see for example, Fig.2A, element 207 and related text. Also see abstract about the manifest file). Therefore, it would have been obvious to one having ordinary skill

in the art at the time the invention was made to include the manifest file into Zan and Sliger's method to provide configuration information to the software installation. One has motivation to do so to automatically install software package without requiring manual intervention by the user as once suggested by Forbes (see for example, col.3, lines 30-34, "Because the manifest file contains the location of the distribution units for any dependencies, the software package manager can acquire and install the dependencies without requiring manual intervention by the user.")

18. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files") in view of Sliger (Sliger et al., US 6,216,175) and in further view of Henry (Craig James Henry, US 6,131,192).

Claim 18:

Zan and Sliger disclose the method as in claim 13 above, but do not disclose the method further comprising, executing a setup program. However, Henry in the same analogous art of software installation discloses the method comprising setting up the software product. (see for example, Fig.3, item 130, 135 and 140 and related text, "Place decompressed file in the temporary storage space", "Begin setting up the software product"). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to

further execute the setup program to install files which are decompressed by Zan and Sliger. One has been motivated to do so to simplify and streamline the process of installing a software product on a computer as once suggested by Henry (see for example, col.1, lines 48-50)

Claim 19:

Zan, Sliger and Henry disclose the method as in claim 18 above, Henry further discloses the method wherein the setup program is executed after each delta has been applied to a corresponding base file. (see for example, Fig.3, item 120, 125, 130, 135 and related text, "Place decompressed file in the temporary storage space"). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further execute the setup program to store files in the temporary directory which are decompressed by Zan and Sliger and check the decompression status. One having been motivated to do so to simplify and streamline the process of installing a software product on a computer as once suggested by Henry (see for example, col.1, lines 48-50)

Claim 20:

Zan and Sliger disclose the method as in claim 13 above, but do not disclose the method further comprising, deleting the deltas from a temporary directory.

However, Henry in the same analogous art of software installation discloses the

step to delete files form temporary storage space. (see for example, Fig.3, step 155, "Delete Files From temporary storage space" and related text). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to delete the deltas files in the temporary directory. One having been motivated to do so to reduce storage costs as once suggest by Zan (see for example, p.1, left column, section 1, Introduction)

19. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zan (Zan et al, "Cluster-Based Delta Compression of a Collection of Files") in view of Henry (Craig James Henry, US 6,131,192) and in further view of Forbes (Forbes et al., US 6,381,742 B2).

Claim 31:

Zan and Hernry disclose the data structure of claim 30, but do not disclose the data structure further comprising data for directing the extraction program.

However, Forbes in the same analogous art of software package management discloses a manifest file (package data) to manage the installation, execution. (see for example, Fig.2A, element 207 and related text. Also see abstract about the manifest file). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the manifest file into the software package to provide configuration information to the software installation. One has motivation to do so to automatically install software package without requiring manual intervention by the user. (see for example, col.3, lines

30-34, "Because the manifest file contains the location of the distribution units for any dependencies, the software package manager can acquire and install the dependencies without requiring manual intervention by the user.")

***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zheng Wei whose telephone number is (571) 270-1059. The examiner can normally be reached on Monday-Thursday 8:00-15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571- 272-1000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ZW



TUAN DAM  
SUPERVISORY PATENT EXAMINER